

REMARKS

In view of the foregoing amendments and the following remarks, Applicants respectfully request reconsideration of the present application. Claims 1, 17 and 29 have been amended and support for the amendments to Claims 1 and 17 can be found at page 18 of the present specification. New Claims 82 and 83 have been added and support for these claims can also be found on page 18.

Applicants affirm the election of the Claims of Group I (Claims 1-46) and have cancelled Claims 47-81.

The Examiner has objected to Claims 17-23 stating that it cannot be determined whether lines 3 and 4 of Claim 17 is intended to read "wherein said support phase comprises primary *support* particles" or to read "wherein said support phase comprises carbon particles" (i.e., the word "primary" is not intended to be present). Applicants have amended Claim 17 to recite that the support phase comprises primary carbon *support* particles. Removal of this objection is therefore requested.

The Examiner has provisionally rejected Claims 24-28 as claiming the same invention as Claims 24-28 of copending application No. 09/532,917. Claims 24-28 have been cancelled and removal of this rejection is requested.

The Examiner has rejected Claims 29, 30, 41 and 44 under 35 USC §101 as claiming the same invention as that of Claims 1-3, 20-22 and 39-41 of prior U.S. Patent No. 6,165,247. This is a double patenting rejection. Further, the Examiner states that Claims 29, 30, 41 and 44 are directed to the same invention as that of Claims 1-3, 20-22 and 39-41 of prior U.S. Patent No. 6,165,247. The Examiner states that the issue of priority under 35 USC §102(g) and possibly 35 USC §102(f) of the single invention must be resolved. Applicants respectfully traverse this rejection.

Applicants have amended independent Claim 29 to incorporate the limitation of Claim 36. Therefore, it is believed that these rejections are now moot with respect to Claims 29 and 30.

The term "same invention" means an invention drawn to *identical* subject matter. A reliable test for double patenting under 35 USC §101 is whether a claim in the application

could be literally infringed without literally infringing a corresponding claim in the patent. *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

Clearly, the invention Claimed in Claims 1-3, 20-22 and 39-41 are not the *same* invention as that recited in Claims 41 and 44 of the present invention. Claim 41 could be infringed without infringing *any* claim of U.S. Patent No. 6,165,247, for example if the active species phase did not include platinum metal. Further, Claims 1-3 of the issued patent also require control of the aerosol such that the droplets have a specified size range. Claims 29, 30, 41 and 44 could be literally infringed by a method wherein the aerosol has droplets outside of the range recited by Claims 1-3 of the issued patent. Therefore, removal of these rejections is requested.

The Examiner has rejected Claims 29, 30, 41 and 44 under 35 USC §102(e) as being unpatentable over U.S. Patent No. 6,165,247 by Kodas et al. Applicants have amended independent Claim 29 to incorporate the limitation of Claim 36 and therefore removal of this rejection with respect to Claims 29 and 30 is requested.

Independent Claim 41 recites a method for the production of composite electrocatalyst particles including the steps of heating an aerosol of droplets in a spray dryer at a temperature of not greater than about 400°C to form electrocatalyst particles including an active species phase dispersed on a support phase. Kodas et al. do not disclose or suggest the use of a spray dryer nor do Kodas et al. disclose or suggest the use of a temperature of not greater than 400°C. The use of a spray dryer and the use of lower temperatures, as recited in Claim 41, results in electrocatalyst particles having improved electrocatalytic properties, as is demonstrated in the present application. Therefore, removal of this rejection with respect to Claims 41 and 44 is requested.

Claims 1-3, 6-16 and 29-46 have been provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Claims 1-3, 7-16, 24-31 and 33-46 of copending Application No. 09/532,917. Upon the indication of otherwise allowable subject matter, Applicants will submit the appropriate terminal disclaimer.

The Examiner has also provisionally rejected Claims 1-3, 6-16 and 29-46 under 35 USC 103(a) as being obvious over copending Application No. 09/532,917.

Application Serial No. 09/532,917 and the present Application Serial No. 09/815,380 were, at the time the invention of Application Serial No. 09/815,380 was made, owned by Superior Micropowders, LLC of Albuquerque, NM. Therefore, removal of this rejection is requested.

The Examiner has rejected Claims 1-5 and 9-16 under 35 USC 102(b) as anticipated by, or in the alternative, under 35 USC 103(a) as obvious over U.S. Patent No. 5,876,867 by Itoh et al. The Examiner has also rejected Claims 17-23 under 35 USC 103(a) as being obvious over Itoh et al. Applicants respectfully traverse this rejection.

The Examiner states that Itoh et al. teach electrocatalyst particles comprising platinum or an alloy of platinum with at least one base metal selected from the group consisting of gallium, vanadium, chromium, manganese, iron, cobalt, nickel and copper. The Examiner considers these to read upon the "active species phase" of the present claims. The Examiner also states that Itoh et al. teach that the metal is supported on a conductive carbon powder.

Claims 1-16 and 17-23 are directed to a powder batch of composite electrocatalyst particles. The particles include a support phase of primary support particles and an active species phase dispersed on the support phase. Itoh et al. do not disclose or suggest electrocatalyst particles having such a structure. Itoh et al. merely disclose the dispersion of carbon particles into a solution containing a metal precursor, mixing, cooling, filtering and washing to obtain carbon having a metal dispersed thereon. There is no disclosure or suggestion of the formation of electrocatalyst particles including an agglomeration of primary support particles. To better clarify the structure of the electrocatalyst particles of the present invention, Applicants have amended Claim 1 to recite that the *particles* have an average size of at least about 0.3 μm . Itoh et al. do not disclose or suggest such a structure or a method for fabricating particles having such a structure. Therefore, removal of this rejection with respect to Claims 1-16 and new Claim 82 is requested.

Independent Claim 17 has been amended to recite that the average size of the electrocatalyst particles is at least about 0.5 μm . Again, Itoh et al. does not disclose or suggest electrocatalyst particles having such a structure, let alone a structure having such

an average particle size. Therefore, removal of this rejection with respect to Claims 17-23 is requested.

Claims 29-46 have also been rejected under 35 USC 103(a) as being obvious over Kodas et al. Applicants respectfully traverse this rejection.

Independent Claim 29 has been amended to incorporate the limitations of Claims 36 and 40. Kodas et al., even if available as prior art with respect to the present application, does not disclose or suggest the use of a two-fluid nozzle to form electrocatalyst particles. Therefore, Applicants request removal of this rejection with respect to Claims 29-35 , 37 and 39.

Independent Claim 41 also recites a method wherein the aerosol of droplets is heated to a temperature of not greater than about 400°C in a *spray dryer*. As is discussed above, Kodas et al. does not disclose or suggest the use of such low temperatures, nor the use of a spray dryer. Indeed, as is disclosed at page 28, lines 20-27 of the present specification, spray dryers are not capable of operating at temperatures in excess of, at most, 600°C even when modified. Therefore, it is respectfully submitted that Claims 41-46 are also in condition for allowance.

Applicants hereby request a three-month extension of time for responding to the outstanding Examiner's Action and a check for the extension fee accompanies this response. It is not believed that any additional fees are owed. Please charge any underpayment or credit any overpayment to Deposit Account No. 50-1419.

Respectfully submitted,

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